

ATOMIC ENERGY *newsletter*[®]

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

Nuclear power programs of Canada, France, UK, US, and Soviet Union have now been summarized in a 250-page United Nations report prepared for July 2 meeting in Geneva of UN's Economic and Social Council. Compiled from questionnaires submitted the nations, the report notes that nuclear power is already approximately competitive in price with coal-produced electricity in the UK; is expected to be competitive in Canada by 1965; and should be competitive in some parts of US by 1965-70. The five countries generally agreed that economics will determine the development of nuclear power, although this may be tempered by urgent needs for new power sources; that maintenance costs will be high because of constant safety precautions; and that large scale reactors will be necessary to produce energy most economically. Concerning U.S. activity, the report states the U.S. reply advised: "Since the earliest potential economic contribution by nuclear power is outside the U.S., rate of development of U.S. nuclear industries will depend in part upon the extent to which other nations are willing and able to use American industry in their nuclear programs". (Other REPORTS, BOOKS, p. 5 this LETTER.)

Major construction which started last fortnight on the Dresden, Ill., Commonwealth Edison nuclear power station marked beginning of what will be the largest U.S. plant of this type. Capacity will be 180,000 electrical kilowatts, using dual cycle boiling water reactors. Prime contract, held by General Electric Co., is in amount of \$45 million. Commonwealth Edison, which will own and operate the plant, will contribute \$30 million, with balance of \$15 million from members of the co-sponsoring Nuclear Power Group. Extensive facilities of GE, at San Jose, Calif., are devoted to this job, with work underway there for some time. (Other BUSINESS NEWS, P. 2 this LETTER.)

Uranium processing plant with capacity of 50-100 tons per day is to be built at Canon City, Colo., by Cotter Corp., Santa Fe, N.M., under contract recently given the firm by the USAEC. Ores will be handled from the Front Range deposits, now being worked at Vitro Uranium Corp's. mill near Salt Lake City. Mill completion date of December, 1957, is planned. (Other RAW MATERIALS NEWS, p. 4 this LETTER.)

Conference on liquid scintillation counting, scheduled for August 20-22, 1957 at Northwestern University, Evanston, Ill., will cover most phases of the field in theory and applications: coincidence counters, chemistry of liquid scintillators, applications in biology, medicine, industry, etc. Full program and details: C. G. Bell, Northwestern University.

Standards and regulations for nuclear products used in conjunction with foods and medicinal materials are now being established by Food and Drug Administration. Radioactive additives will be treated the same as chemical additives, according to FDA Commissioner G. P. Larrick. To provide base measurements in a continuous survey of radioactivity in common foods, initiated recently, FDA will use canned foods recovered from the Antarctic where they had been left years ago by the Scott, Shackleton and Byrd expeditions. (Other PRODUCTS, PROCESSES, p. 4 this LETTER.)

ATOMIC ENERGY BUSINESS NEWS...

EXTENSION MADE UNDER REACTOR DEVELOPMENT PROGRAM:- Modification has been made to the third invitation to U. S. industry to participate in the USAEC's reactor program, as it applies to development of full-scale nuclear power plants using fluid fuel reactor systems. For such reactor approaches, required completion date has been extended from June 30, 1962 to at least June 30, 1963. Prolonged delay in the start-up of the homogeneous reactor experiment at Oak Ridge, due to leaks, caused the extension. Depending on the successful outcome of the experimental program, Pennsylvania Power & Light Co. is planning a 150,000-kilowatt plant of this type with Westinghouse Electric Co. as builder.

NEW FACILITIES FOR NUCLEAR WORK:- Sixty three acre tract in Greenburgh, N.Y. has been bought for a reported \$500,000 by Nuclear Development Corp. of America as its new research and development center. The firm's present White Plains, N.Y., building will be used as a fabricating and manufacturing center. Location is opposite Union Carbide Corp.'s property where UCC is putting up a research center. Meanwhile, development continues at NDA-Pawling laboratories, the company's 1200-acre experimental station near Pawling, N. Y. First radiation facility in Western Europe to be made available on a commercial basis to industrial researchers was opened last week in Cologne, Germany, by Leybold-Hochvakuum Anlagen, G.M.B.H., and High Voltage Engineering Corp., Burlington, Mass. The facility has a 2-million electron-volt, 0.5-kilowatt, Van de Graaff electron accelerator, and will be managed and operated by Leybold who represent High Voltage in W. Germany, Switzerland, and Spain.

WORK UNDERWAY ON DEVELOPMENT OF HIGH-TEMPERATURE GAS-CYCLE NUCLEAR REACTOR SYSTEM:- Alco Products, Inc., Schenectady, N.Y., in a cooperative undertaking with Sanderson & Porter, New York, N.Y., is designing a reactor system capable of generating 50,000 kilowatts of heat energy and which can produce steam at 1450-lbs./sq. in. The system uses a pebble-bed graphite reactor which is a collection of parallel tubes filled with small graphite spheres that contain uranium and are heated by the fissioning of the uranium. Heat is transferred from the spheres to a steam generator by helium gas, which is continuously recirculated through the system. Alco officials feel that the steam pressures produced (1450-lbs./sq.in.) and the temperature (1,000 deg. F.) will enable full advantage to be taken of modern high-pressure steam turbines and electrical generators which now find use in central stations.

ATOMIC ENERGY PATENT DIGEST...latest grants made:

GRANTS ISSUED June 4, 1957; ASSIGNED TO GOVERNMENTAL ORGANIZATIONS:- Fabrication of intricate shapes from beryllium (2,794,241). Fuel element loading apparatus for nuclear reactors (2,794,562). Releaseable holder for rod (2,794,670). Electro-magnetic apparatus (2,794,923).

GRANTS ISSUED June 11, 1957; ASSIGNED TO GOVERNMENTAL ORGANIZATIONS:- Converting uranium ammonium phosphate to uranyl fluoride (2,795,479). Recovery of uranium from aqueous phosphate containing solutions (2,795,480). Separation of tantalum and niobium (2,795,481). Absorption of iodine vapor (2,795,482). Production of metals (2,795,499). High impedance electronic circuit (2,795,654). Apparatus for counting fast neutrons in presence of gamma rays (2,795,703). Neutron ion chamber (2,795,704).

GRANTS ISSUED June 18, 1957; ASSIGNED TO GOVERNMENTAL ORGANIZATIONS:- Purification of thorium (2,796,320). Conversion of dimethyl ether boron trifluoride complex to potassium fluoborate (2,796,323). Separating and concentrating isotopes of boron and oxygen (2,796,330). Electrodeposition of zirconium (2,796,392). Method of intermittently operating a neutronic reactor (2,796,396). Recovering uranium from calutron wash solutions (2,796,393). Means for sustaining a nuclear fission chain reaction (2,796,398). Radiation shield (2,796,411). Separation process by adsorption (2,796,424). Radiation shield (2,796,529).

Note: Complete copies of above patent grants may be obtained at 25¢ each from Commissioner of Patents, Washington 25, D.C.

PEOPLE...in atomic energy work

Bernard G. E. Stiff is new manager of atomic power department of United Shoe Machinery Corp., Boston, Mass.

Victor J. Kropf has been appointed to newly created position of sales manager for atomic fuel department, Westinghouse Electric Corp., Pittsburgh.

Homer S. Myers has been made vice-president for marketing of Tracerlab, Inc., Waltham, Mass., manufacturer of nucleonic products.

ATOMIC ENERGY FINANCIAL NEWS...

FINANCING TO BE UNDERTAKEN:- Kerr-McGee Oil Industries, Inc., Oklahoma City, will shortly issue via underwriters \$20 million in sinking fund debentures and 200,000 shares of its common stock, with proceeds mainly for financing construction of large capacity uranium mill which Kermac Nuclear Fuels Corp., a subsidiary, is building at Grants, N. M., in the rich Ambrosia Lake area. The sinking fund securities will carry warrants entitling purchase of five shares of the company's common stock (at \$80) for each \$1,000 debenture bought. Warrants will be effective April 1, 1958 to June 1, 1964. This "sweetening" is in line with present U.S. bond market requirements. Offering syndicate is led by Lehman Brothers and Straus, Blosser & McDowell. (Kermac recently signed contract with USAEC for construction of its mill at estimated cost of \$16 million; proposed capacity is 3,300 tons/day. Contract with USAEC provides that Government will buy \$300 million in uranium concentrates from Kermac by Dec. 31, 1966 at rate of 33 million lbs. in the first five years and 4.5 million lbs. a year thereafter. Largest stockholder in Kerr-McGee is Senator Robert S. Kerr who, with his wife Grayce, owns nearly 23% of the company's stock.)

HIGHER FIRST HALF EXPECTED BY METALS COMPANY:- Net income for first half 1957 of Beryllium Corp. will be about 20% ahead of 1956 first half according to Walter R. Lowry, president. In the 1956 period, he said, the company earned \$569,328 on sales of \$8,602,396. For the first quarter of 1957, earnings were \$342,255. compared with \$338,585 in the like 1956 period. (Company expects starting-up costs of its new \$300,000 Hazleton, Pa., plant to eat into full year 1957 income. Although this Hazleton plant which will produce pure beryllium billets under a \$23.5 million contract from the USAEC, will get into initial production in August, it will be some time later before it is in full production. Under its USAEC contract, the company will produce and sell the Government 500,000 lbs. of beryllium billets over a five-year period.)

PRIVATE STOCK PLACEMENT MADE BY NUCLEAR REACTOR MAKER:- Some 33,500 shares (\$7,537,500) of its common stock have been privately placed at \$225 a share by Aerojet-General Corp., Calif.- based constructor of mass produced nuclear research reactors, and of liquid and solid propellant rocket engines. In making the announcement, William O'Neill, president of General Tire & Rubber Co., the majority (87.6%) holder of Aerojet-General stock, said that none of General Tire's stockholdings was involved. Placement was negotiated by Kidder, Peabody & Co., and Auchincloss, Parker & Redpath. Purchasers of the Aerojet-General offering included Atomic Development Mutual Fund, Inc., which bought 2,000 shares.

STOCKHOLDING CHANGES REPORTED:- Changes in stockholdings recently made by officers or directors of firms in the nuclear field include acquisition by T. P. Tanis, president, of 63,613 common shares of El-Tronics, Inc., Phila., manufacturer of nucleonic and electronic equipment. Acquisition, through conversion of debentures, increased Mr. Tanis's direct holdings to 73,313..... Baker & Co., Inc., bought 600,000 class A common shares in Nuclear Corp. of America, increasing its direct ownership to 800,000.

NEW HIGH IN SALES AND NET EARNINGS REPORTED BY INDUSTRIAL FIRM:- Sales for the fiscal year ended March 31, 1957 were at a new high of \$74,402,000 for Daystrom, Inc., diversified firm which now has over 90% of its assets in the electrical-electronics field and which operates Daystrom Nuclear as a separate operating division. A net of \$2.77 per share was shown by the firm for this period; this compares with earnings of \$2.01 a share for the previous fiscal year, on gross sales of \$63,193,000. (Daystrom Nuclear, originally an instrument manufacturer, has broadened its lines so that it now supplies complete nuclear reactors and controls. The year saw several contracts obtained, including design and manufacture of the Brookhaven medical reactor, and a reactor for Curtiss-Wright Corp. The division is also doing work on the nuclear ship propulsion program for the Navy, and is making a 10-kilowatt training reactor for sale to universities and industrial firms.)

ADDITIONAL MONIES FOR NEW USAEC BUILDING:- Bill to provide additional funds for the USAEC's new headquarters building at Germantown, Md., has been favorably reported out by Joint Congressional Committee on Atomic Energy. Increase in overall cost of building, from \$10 million to \$13.3 million, made additional funds necessary; new wing had been added to original plans. Committee suggested that Commission obtain competitive bids for construction of this new wing.

NEW PRODUCTS, PROCESSES & SERVICES...for nuclear lab & plant...

NEW PRODUCTS FROM MANUFACTURERS:- New Samson survey meter, model S-12, is a portable battery-operated instrument using a thin window ionization chamber to measure alpha contamination on flat surfaces. Factory calibration is directly in disintegrations per minute for uranium alpha particles. Manufacturer claims the Samson will detect alpha particles with energies as low as 1 mev. --Technical Associates, Inc., Burbank, Calif.

New 200-channel analyzer, model 3302, is said to offer all the advantages of a 256-channel analyzer with the simplicity of a 100-channel analyzer. The instrument automatically subtracts background and may be operated in coincidence with external pulses, either prompt or delayed. Data is presented on a cathode ray tube during and after measurements. --Radiation Instrument Development Laboratory, Chicago 21, Ill.

Glove box, with its own air supply, exhaust system, and services, is offered by this manufacturer as an independent portable work space for radiochemistry, biology, etc. Exhaust filter used is one developed by U. S. Army Chemical Warfare Service and USAEC, and said to have retention efficiency of 99.99% for particles in the 0.3-0.5 micron range. --Fisher Scientific Co., Pittsburgh 19, Pa.

NOTES:- Manufacture has been started by Victoreen Instrument Co., Cleveland, Ohio, on two neutron detector tubes for reactor control and monitoring systems. One tube, for fast neutrons, is a recoil type with polyethylene inner wall and ethylene filling. Other is enriched boron trifluoride proportional tube for counting thermal neutrons.

Radioactive isotopes in microcurie amounts that may be purchased without USAEC license are offered by Nucleonic Corp. of America, Brooklyn, N.Y. Some seventeen isotopes are so available.

Nuclear-Chicago Corp., Chicago, Ill., has now received Federal trade mark no. 647,068 to cover name Actigraph as applied to the company's products. The company had filed application with U. S. Patent Office (trade-mark div.) May 23, 1956.

RAW MATERIALS...prospecting, mining, marketing...

UNITED STATES:- Option has been acquired by Vitro Minerals Corp. to develop and mine uranium claims of Shoni Uranium Corp., in the east Gas Hills district of Wyoming. Vitro Minerals, subsidiary of Vitro Corp. of America and Rochester & Pittsburgh Coal Co., gets right under this option to explore some 51-claims, and to participate in eventual mineral sales rights..... Following a redetermination that the USAEC Globe, Arizona, buying station has no reasonable prospects of economic uranium production, the Commission will make final shut-down of this station June 30, 1957. Low grade of nearby ores had discouraged any private company from proposing erection of mill.

CANADA:- Consolidated Denison Mines, third company to reach production status in the Blind River uranium area of Northern Ontario, is now making first shipment of uranium precipitates from its treatment plant. Production is from first unit of the plant to be completed, which consists of one-half of the final plant of 6,000 tons daily rated capacity. Company holds contract with Eldorado Mining & Refining covering production of \$201,895,000 worth of uranium precipitates..... Stanleigh Uranium, preparing for production from its property in the Blind River area, is ahead of schedule on its mine preparation and mill construction programs according to recent report to stockholders. Contract with Eldorado Mining & Refining for uranium precipitates in amount of \$90,506,250 is held by company.

INTERNATIONAL ATOMIC ENERGY NEWS...

Washington, D. C.:- Treaty establishing International Atomic Energy Agency was ratified last fortnight by the Senate after over three months of consideration by that body. No House action is needed. The agency will come into being when the treaty has been ratified by eighteen nations, providing three are from: U. S., U.K., USSR, Britain, Canada, and France. Robert McKinney, New Mexico newspaper publisher, is to be the first U. S. representative to this new Agency. First session of the General Conference of the IAEA is now scheduled for Oct. 1, 1957, in Vienna.

Longon, England:- Agreement has been reached under which U. K. Atomic Energy authority will make available to the USAEC all detailed information concerning Calder-Hall-type nuclear power plants. In addition, the British Authority will make available to private industrial firms in the U.S. information of a more general nature, but assertedly adequate to evaluate the Calder Hall design.

- CONTRACTS AWARDED...in the nuclear field...

NUCLEAR AIRCRAFT TEST FACILITY:- Contract has been awarded by the USAEC to Howard S. Wright Construction Co., Seattle, Wash., to construct flight engine test facility at the aircraft nuclear propulsion area of the USAEC's national reactor testing station, Idaho Falls, Idaho. Low bid of \$6,044,208.85 submitted by Wright won out over six other bids ranging from \$6,118,028.75 to \$7,718,014.00 for this job. Work covered by Wright's contract includes control, test and supporting buildings; shielded roadway; contaminated waste systems; and other facilities. Job is estimated to take about 2-years to complete.

RADIATION MEASUREMENT DEVICES:- Contracts totaling \$281,800 covering 50,000 dosimeter pens and 12,000 dosimeter chargers have been awarded by General Services Administration to Universal Transistor Products Corp. (formerly Universal Atomics), New York. Instruments, for Federal Civil Defense Administration, are for nuclear weapons defence.

FIRST EUROPEAN PRIVATELY-OWNED RESEARCH REACTOR:- AMF Atomics (division of American Machine & Foundry Co.) New York, has received contract from SORIN (Societa Ricerche Impianti Nucleari), jointly owned by the Italian industrial groups Fiat and Montecatini, to design and construct a one megawatt pool-type nuclear reactor. The SORIN reactor, first on the continent to be erected solely by a commercial organization, will be used for industrial research and training directed toward areas in which Fiat and Montecatini are active. Signing of the SORIN contract brings to six the number of research reactors AMF is handling for installation outside the U.S.: Holland (completed); Germany (nearing completion); and Greece, Japan, Canada (being built).

POWER PLANT FOR ARGONNE LOW POWER REACTOR:- On a bid of \$752,000.00, Fegles Construction Co., Inc., Minneapolis, Minn., has received contract to construct power plant, supporting buildings, and equipment for the Argonne low power reactor at the USAEC's national reactor testing station. Six other firms submitted bids for the project; proposals were from \$882,955 to \$779,000.

NEW BOOKS & OTHER PUBLICATIONS...on nuclear subjects...

Atomic Radiation. Designed for use of technicians; originally prepared under U. S. Air Force contract. Discusses, in simplified terms, nuclear physics, shielding methods, monitoring instruments, permissible radiation dosages, etc. 120 pages. --RCA Service Co., Camden 8, N. J. (\$1.60)

Effect of Gamma Radiation On Odor, Color, and Vitamins of Meat. Work done at Florida State University. 6 pages. No. PB 97462. (Microfilm, \$1.80; photostat \$1.80)..... Irradiation of Lipid-Protein Systems. Investigations at Armour Research Foundation. 25 pages. No. PB-125395 (Microfilm, \$2.70; photostat \$4.80) --Library of Congress, Washington 25, D.C.

Selected Annotated Bibliography; Uranium-Bearing Coal. Geological bulletin No. 1059-A. --Geological Survey, Washington 25, D. C. (25¢)

Study of USAEC Procedures & Organization in Licensing Reactor Facilities. By staff of Joint Committee. 218 pages. --Sup't. of Documents, Wash. 25, D.C. (55¢)

Proceedings of 1957 National Nuclear Instrumentation Conference --Instrument Society of America, Pittsburgh 22, Pa. (\$5.00)

Transcript: Atomic Energy in Industry Conference (1957) --National Industrial Conference Board, New York 22, N.Y. (\$15.00)

Papers Presented: Hot Laboratories and Equipment Conference (1957) --American Society of Mechanical Engineers, New York 18, N.Y. (\$10.00)

NOTES:- A Microprint edition of the complete USAEC's file of declassified information is being made available by Readex Microprint Corp., 115 University Pl., New York, N.Y. Some 60,000 documents will be offered.

Engineering for Atomic Power is a 36-page illustrated booklet issued by Stone & Webster Eng. Corp., 49 Federal St., Boston, Mass., describing the firm's World War II atomic energy activities and its present nuclear power work.

Opportunities for small business in the nuclear power field are discussed by Philip G. Read of USAEC in leaflet issued by Small Business Administration, Washington 25, D. C.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

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